

AMENDMENTS TO THE CLAIMS

The following is a complete listing of claims with a status identifier in parenthesis.

Listing of the Claims:

1-22 (Canceled)

23. (Currently Amended) A method for heating a sample, said method comprising:

providing a heating apparatus which includes a waveguide, an applicator, and a deflector positioned in said waveguide to form a resonant cavity with the sample and said applicator; and

inserting the sample in ~~an~~ the applicator;

generating electromagnetic radiation at a first output power level; and

rotating ~~a~~ the deflector for adjusting ~~a~~-coupling factors between a ~~the~~ waveguide and ~~a~~ the resonant cavity, wherein rotating the deflector includes:

performing at least once one of the following:

positioning the deflector in a first position and measuring a first power of electromagnetic radiation reflected from the applicator, the reflected radiation corresponding to said first position of the deflector,

rotating the deflector to a second position that is different from the first position and measuring a second power of electromagnetic radiation reflected from the applicator, the reflected radiation corresponding to said second position of the deflector; and

determining a preferred position of the deflector based on the amount of power reflected from the waveguide applicator in at least the first and second positions.

24. (Previously Presented) The method according to claim 23, wherein the sample has a first temperature T_1 , the method further comprising :

heating the sample to obtain a second temperature T_2 , wherein $T_2 > T_1$; and

rotating the deflector to adjust the coupling factor between the waveguide and the resonant cavity in response to a variation in a dielectric properties ϵ_{sample} of the sample.

25. (Canceled)

26. (Currently Amended) The method according to claim ~~25~~23, further comprising:

providing a first storing means;

storing information relating to the first position in the storing means and storing a measured first power in relation thereto; and

. storing information relating to the second position in the storing means and storing a measured second power in relation thereto.

27. (Previously Presented) The method according to claim 26, wherein determining the preferred position of the deflector further comprises processing the stored first and second measured powers for determining the preferred position of the deflector corresponding to a local or an absolute minimum in the measured power or to a predetermined ratio of the measured power to the first output power level.

28. (Currently Amended) The method according to claim ~~25~~23, further comprising positioning the deflector in a preferred position.

29. (Currently Amended) The method according to claim ~~25~~23, further comprising positioning the deflector in a preferred position and generating electromagnetic radiation at a second output power level which is larger than the first output power level.

30. (Previously Presented) The method according to claim 26, further comprising determining a relative permittivity measurement of the sample by comparing the stored measured powers with corresponding stored measured powers from a different sample.

31. (Previously Presented) The method according to claim 26, further comprising determining an indication of a chemical composition of the sample by comparing the stored measured powers with corresponding stored measured powers from a sample of known chemical composition.

32. (Previously Presented) The method according to claim 31, wherein the sample comprises at least one reactant for performing a chemical reaction.

33. (Previously Presented) The method according to claim 32, further comprising:
performing a chemical reaction with the at least one reactant; and
determining a degree of reaction for the chemical reaction using an indication of chemical composition of the sample.